

Index to Authors, Volume 26

A

ASHBAUGH, R. P. Alpeth Cable Sheath 441

B

BACON, W. M.	Automatic Switching for Private-Line Teletypewriter Service	20
BENNETT, W. R.	Noise in PCM Systems	495
BISHOP, W. S.	Synthetic Hard Rubber	55
BLACKWELL, O.	Thomas Shaw Retires	468
BROTHERTON, M.	Making Energy Talk	253

C

CARBREY, R. L.	Decoding in PCM	451
CHAFFEE, J. G.	Terminals for the New York-Boston Radio Relay System	97
CHARITY, C. A.	Murray Hill Glass Washing "Laundry"	400
CHESNUT, R. W.	Program Transmission Over Broadband Carrier Systems	377
CRABTREE, J.	Rubber and the Weather	119

D

DAVIS, K. H.	Multivibrator Step-Down by Fractional Ratios	114
DOHERTY, W. H.	Europe and the Marconi Congress	34
DORFF, L. A.	Highway Mobile Radio Systems	491
DUNHAM, J. M.	Power Line Treatment for the M1 Carrier Telephone System	2

E

EDSON, R. C.	M1 Carrier: The Common Terminal	77
EMLING, J. W.	Transmission Features of the M1 Carrier System	101
ENTZ, F. S.	Wire Telephone Network for New York State Police	213

F

FELDMAN, C. B.	96-Channel Pulse Code Modulation System	364
FOX, A. G.	An Adjustable Waveguide Phase Changer	245
FRANKE, H. C.	Radio Circuits for the Death Valley Area	289
FRASER, J. M.	Transmission Circuit Simulator	241

G

GAINES, W. L.	High-Frequency Oscilloscopes for Pulses and Other Transients	68
GARFIELD, O. R.	Distribution Analyzer for Lengths of Impulses	325

H

HAMILTON, B. P.	Carrier Telegraphy in the Bell System	58
HEARN, R. B.	Electronic Regeneration of Telegraph Signals	173
HERBORN, L. E.	Conductance Unbalance Bridge	73
HILL, R. B.	Joseph P. Davis—Pioneer in Underground Telephone Distribution	457
HILL, R. B.	Thomas A. Watson—Maker of Telephones	166
HONAMAN, R. K.	Telephone Business in 1947—A Digest of the (A T & T) 1947 Annual Report	132
HOPPER, A. L.	Plotting Board for 65-Mc Impedance Measurements	258

J

JOHNSON, J. B.	Movable-Screen Cathode-Ray Tube	219
JOHNSON, V. L.	Cold-Cathode-Tube Test Set	481
JONES, P. F.	Probe for Testing K Amplifiers	199

K

KITTNER, J. W., Jr.	Test Sets for Dielectric Faults in Coaxial Cable	416
KOCK, W. E.	Artificial Dielectric Lenses for Microwaves	145

L

LAKE, R. A.	Teletype Reperforator Transmitter for Automatic Switching Systems	106
LEWIS, W. D.	Waveguide Branching Filter	372
LUNDBERG, C. V.	Rubber Thermoplastic Jacket for Buried Cable	148

M

MANSON, M. H.	Sun-Days Are Here	280
MASON, W. P.	EDT and DKT Crystals for Carrier Channel Filters	222
MCHUGH, K. S.	License Contract	447
MCLEAN, D. A.	Adsorbed Water in Insulation	170
MILLER, D. D.	EA Relay	340
MONK, N.	Telephone Service for Trains	9
MORTON, E. R.	Analyzing Relay Characteristics	298
MUELLER, G. E.	Polyrods	64

N

NEWHOUSE, R. C.	248A Marine Radio Telephone Equipment	294
NYLUND, H. W.	Rural Party-Line Service by Radio	49

P

PFANN, W. G.	Electropointed Tungsten Wires	205
PFISTER, A. C.	Precision Carbon Resistors	401
POWER, J. R.	Models 65 and 66 Hearing Aids	30

R

REILING, P. A.	Companding in PCM	487
ROETKEN, A. A.	Repeaters for the New York-Boston Radio Relay System	193

S

SCHOTT, L. O.	Playback for Visible Speech	333
SEARS, R. W.	Beam Deflection Tube for Coding in PCM	411
SELBY, G. T.	Area Management of Staff Services	342
SHOWER, E. G.	New Vacuum Tubes for the Very High Frequencies	361
STEHLIK, F. E.	Wide Band Crystal Filter for Carrier Program Circuits	462

T

TIDD, W. H.	Measuring Transmission on Circuits in Use	156
TIERNEY, W. L.	Repeater Buildings for the First Radio Relay System	281
TYRRELL, W. A.	Waveguide Hybrids	24

V

VAN ROOSBROECK, W. .	High-Frequency Deposited Carbon Resistors	407
----------------------	---	-----

W

WAGAR, H. N.	Slow Acting Relays	161
WIENER, F. M.	Equipment for Measuring Sound Pressures in the Auditory Canal	261
WILLIS, E. S.	A New Crystal Channel Filter	13
WINDELER, A. S.	Video-Pair Cable	201

Index to Subjects and Titles, Volume 26

A

A-B Test, see Circuits, Test	
Abstracts and Comments	
"And the Trumpets Blow"	332
Strong Telephone Companies Essential	509
Adjustable Waveguide Phase Changer	245
Adsorbed Water in Insulation	170
Airborne Magnetometer Explores Volcano	198
Alpeth Cable Sheath	441
American Institute of Electrical Engineers	
Laboratories' Members Serving on General Committees	
1947-1948 Are Listed	431
American Telephone and Telegraph Company Stock	
More A T & T Stock Available to Employees	427
Amplifiers	
Probe for Testing K Amplifiers	Jones
Transistor	321
Analyzing Relay Characteristics	Morton
Antennas	
57A—"Cloverleaf" Antenna	293
Metal Lens—Microwave "Telescope" Sweeps Sky Path	212
Metallic Dielectric—Artificial Dielectric Lenses for Microwaves	Kock
Radar—Polyrods	Mueller
Area Management of Staff Services	Selby
Artificial Dielectric Lenses for Microwaves	Kock
Atomic Energy Commission. General Advisory Committee	
Dr. Buckley to Advise on Atomic Energy	383
Attenuators	
High-Frequency Deposited Carbon Resistors	Van Roosbroeck
Automatic Switching for Private-Line Teletypewriter Service	Bacon
Awards and Citations	
Army Certificate of Appreciation Awarded	
R. B. Hearn	386
Bell System Wins Distinguished Service Award of the Special	
Devices Association for Its Training Methods	470
British Horological Institute's Gold Medal for 1947	
Presented to W. A. Morrison	81
Certificate of Merit to:	
L. A. Dorff	181
A. F. Bennett, H. W. Bode, Ralph Bown, Harvey Fletcher, T. C. Fry,	
R. W. King, W. A. MacNair, W. H. Martin, and K. C. Black	467
Eta Kappa Nu Awards to J. R. Pierce and R. R. Hough. (Honorable Mention to J. W. McRae, W. E. Ingerson, W. A. Depp, and J. A. Morton)	62
Franklin Institute Awards Elliott Cresson Medal to E. H. Colpitts.	429
Franklin Institute Honors C. A. Lovell and D. B. Parkinson by Award of the 1948 Potts Medal	383
Greater New York Safety Council Award to Bell Laboratories' Chauffeurs (Picture)	314
Honorary Degree of Doctor of Engineering from Case Institute of Technology to Dr. Buckley	266
Honorary Degree of Doctor of Science Awarded by Columbia University to Dr. Buckley	304

Awards and Citations, Continued

Institute of Radio Engineers

Awards for 1948 to M. W. Baldwin, H. S. Black, L. A. Meacham, and J. R. Pierce	349
Medal of Honor to Ralph Bown and Election of H. A. Affel as Fellow of Institute	427
Laboratories Receives Award From Garden Club of New Jersey	352
Medal for Merit to: E. H. Colpitts	267
C. N. Hickman and H. E. Ives	345
Vail Medals (National) Awarded Four Mississippi Telephone Operators	304

B

Beam Deflection Tube for Coding in PCM	Sears	411
Bell Laboratories Club		
Constitution Being Revised		469
Officers for the 1948-1949 Season		389
Bell System Opens Mid-West Television Network (Map)		423
Bell System Presidents Visit Murray Hill		466
Bell System Radar School		349
Blueprints		
Picture Showing Final Stage of Processing Blueprints		478
Bonus, Veterans'		
New York State Veterans' Bonus		87
Book Notices		
Atomic Energy, by K. K. Darrow		450
Bridges		
Conductance Unbalance Bridge	Herborn	73
Capacitance-Conductance, No. 12		
High-Precision Test Set Goes to Washington		301
Correction		360
Buildings		
Murray Hill No. 2		510
New Headquarters Building for the Western Electric Company		227
Repeater Buildings for the First Radio Relay System	Tierney	281

C

Cable Plow, C-60		
Coaxial Cable and Radio Relay Routes Move Southward and Westward		83
Cables		
Coaxial		
Coaxial Cable and Radio Relay Routes Move Southward and Westward		83
Emergency Cord for Coaxial Cable		113
New York-Albany Coaxial System Placed in Operation (May 21)		264
Philadelphia-Cleveland Coaxial Opened for Telephone Service (Map Shown)		508
Test Sets for Dielectric Faults in Coaxial Cable	Kittner	416

Cables, Continued	
Corrosion	
New Equipment for Corrosion Testing on Underground Cables (Picture)	355
Faults and Fault Location	
Test Sets for Dielectric Faults in Coaxial Cable	Kittner
Sheaths and Sheath Losses	
Alpeth Cable Sheath	Ashbaugh
Bell System Committee to Study Aerial Cable Sheath	306
Polyethylene Cable Sheath	35
Rubber Thermoplastic Jacket for Buried Cable	Lundberg
Testing	
Twist and Elongation Tests of Cable	260
Video-Pair Cable	Windeler
Cancer Facts	320
Capacitance-Conductance Measurements	
High-Precision Test Set Goes to Washington	301
Capacitors	
Standard Capacitor	500
Carrier Telegraphy in the Bell System	Hamilton
Cathode-Ray Tubes	
Cold-Cathode-Tube Test Set	Johnson
Movable-Screen Cathode-Ray Tube	Johnson
Central Office Equipment	
River Grove Office's New Plate Glass Window Protecting Dial Equipment While Allowing View	318
Cheyenne Wells, Colorado	
Rural Party-Line Service by Radio	Nylund
Circuit Simulator	
Transmission Circuit Simulator	Fraser
Circuits	
Carrier	
Wide Band Crystal Filter for Carrier Program Circuits	Stehlik
Electric	
Distribution Analyzer for Lengths of Impulses	Garfield
Multivibrator Step-Down by Fractional Ratios	Davis
Test	
Transmission Circuit Simulator	Fraser
“Cloverleaf” Antenna	293
Coaxial Antenna Array for Mobile Service (Explanation of November Record Cover)	456
Coaxial Cable and Radio Relay Routes Move Southward and Westward	83
Coding Tubes	
Beam Deflection Tube for Coding in PCM	Sears
Coils, Non-Linear	
Wire, Fine as Human Hair, Wound on Smallest Non-Linear Coil	353
Cold-Cathode-Tube Test Set	Johnson
Companding in PCM	Reiling
Computer	
Relay Computer for the Army	208
Condensers, Electrolytic	
Historic Firsts: The Electrolytic Condenser	331
Conductance Unbalance Bridge	Herborn

Conferences		
Bell Telephone Laboratories and the Wisconsin Company Hold Technical Conference	183	
Conference on Medical Administration Problems in Commerce and Industry	268	
Europe and the Marconi Congress	Doherty	34
Executive Conference, Walter S. Gifford Addresses		344
Western Electric-Bell Laboratories Development Conferences		35
Connector Units for Voice Recorders		351
Contract, License	McHugh	447
Control Units, 46A		
Highway Mobile Radio Systems	Dorff	491
Cords		
Emergency Cord for Coaxial Cable		113
Corrosion, Electrolytic		
Rubber Thermoplastic Jacket for Buried Cable	Lundberg	148
Covers—1948		
Bell Laboratories Trims a Christmas Tree		December
Checking Wiring of a Variable Oscillator		September
Motor-Driven Machine Tests Telephone Dials		May
Murray Hill After the January 1 Sleet Storm		February
Plotting a Three-Dimensional Diagram of an Atom's Structure		October
Portable Tower to Survey Route for Radio Relay Systems		January
Shielded Lens Antenna—New York-Boston Microwave Relay Circuit		April
Switching Development Laboratory		June
Testing Array of Coaxial Antennas for Mobile Radio Service		November
Testing Electric Current of Electron-Bombarded Diamond Chips		March
Transistor		August
Waveguide Connection From Repeater Apparatus to Lens Antenna		July
Crystal Controlled Broadcasting		
Historic Firsts: Crystal Controlled Broadcasting		420
Crystals		
Artificial		
EDT and DKT Crystals for Carrier Channel Filters	Mason	222
Synthetic Crystals of Quartz		384
Quartz		
Historic Firsts: Crystal Controlled Broadcasting		420
Stereoscopic Drawing of Crystal Structure		406

D

Joseph P. Davis—Pioneer in Underground Telephone Distribution	Hill	457
Death Valley		
Radio Circuits for the Death Valley Area	Franke	289
Decoding in PCM	Carbrey	451
Dialing		
How Fast Do You Dial?		486
Toll Dialing Points Increased		429
Diamonds		
Queen of Gems May Have Rôle in Telephony		126
Directories		
New Telephone Directory		387
Displaced Persons		
Laboratories' Woman Sponsors First DP Arrivals		515

Distribution Analyzer for Lengths of Impulses	<i>Garfield</i>	325
Drafting		
Patent Department Drafting Room (Picture)		348
Drawings, Three Dimensional		
Stereoscopic Drawing of Crystal Structure		406

E

EA Relay	<i>Miller</i>	340
EDT and DKT Crystals for Carrier Channel Filters	<i>Mason</i>	222
Education		
Drafting Assistant Course Graduation		424
New Training Courses Start		422
Out-of-Hour Courses		516
Part-Time Postgraduate Study Plan		425
Telephone Switching Design School at 14th Street—		
Third Class (Picture)		86
Whippany Drafting Assistant Training Program (Picture)		316
81-C-1 Teletypewriter Switching System		370
Electric Currents		
Queen of Gems May Have Rôle in Telephony		126
Electron Tubes		
Beam Deflection Tube for Coding in PCM	<i>Sears</i>	411
Western Electric Tubes to Be Made by Machlett Laboratories		509
Electronic Regeneration of Telegraph Signals	<i>Hearn</i>	173
Electronic Warfare Battalion		
T. H. Neely Heads Reserve Electronic Warfare Battalion		89
Electronics at Allentown		502
Electropointed Tungsten Wires	<i>Pfann</i>	205
Emergency Cord for Coaxial Cable		113
Employee Training		
Training Program in Human Relations Given by the A T & T		84
Employees' Benefit Committee Report		178
Equipment for Measuring Sound Pressures in the Auditory Canal	<i>Wiener</i>	261
Executive Conference, see Conferences, Executive		
Exhibits and Demonstrations		
Traveling Telephones and Displays		427
Explosions		
Miracle at Flat Rock, Michigan		230
Eye Protection Program		471

F

FCC Delegation Visits Murray Hill		383
Fellowships		
Frank B. Jewett Fellowships		179
Films, Thin		
High-Frequency Deposited Carbon Resistors	<i>Van Roosbroeck</i>	407
Precision Carbon Resistors	<i>Pfister</i>	401
Filters		
New Crystal Channel Filter	<i>Willis</i>	13
Waveguide Branching Filter	<i>Lewis</i>	372
Wide Band Crystal Filter for Carrier Program Circuits	<i>Stehlik</i>	462
Football Games of the Illini to be Televised		470
Frequency Control		
Multivibrator Step-Down by Fractional Ratios	<i>Davis</i>	114

G

GR-S, see Rubber, Synthetic (GR-S)	
Germanium Varistors	485
Glassware, Chemical	
Murray Hill Glass Washing "Laundry"	Charity
Greater New York Fund Closes	400
Gulfport	
Laboratories Test Plot at Gulfport, Miss. (Picture)	305
	501

H

Hall Effect	
Magnetic Field Strength Meter	494
Headsets, 52A	
Modernistic Head-Dress	225
Hearing	
Equipment for Measuring Sound Pressures in the Auditory Canal	Wiener
Models 65 and 66 Hearing Aids	Power
High-Frequency Deposited Carbon Resistors	Van Roosbroeck
High-Frequency Oscilloscopes for Pulses and	
Other Transients	Gaines
High-Precision Test Set Goes to Washington	
Correction	301
360	360
High-Speed Teletypewriter Service for the War	165
Highway Mobile Radio Systems	Dorff
Historic Firsts	
Counting Relays	491
Crystal Controlled Broadcasting	291
Electrolytic Condenser	420
Radio Altimeter	331
Rectifiers as Modulators	18
Start-Stop Oscillator	251
Translation	210
Housing, Murray Hill	
Relocation Service Opens a Housing Information Center	445
How Fast Do You Dial?	511
Human Relations in Management	
Training Program Given by the A T & T	486
	84

I

Impedance Measurements	
Plotting Board for 65-Mc Impedance	
Measurements	Hopper
Institute for Occupational Health	258
Institute of Advanced Study at Princeton	
We See by the Papers, That—	268
Institute of Radio Engineers	
Lists Laboratories' Members Serving as Officers or Committee Members	517
Insulation	
Paper	
Adsorbed Water in Insulation	McLean
Polyethylene	
Video-Pair Cable	170
International Relations Group off to a Brilliant Start	Windeler
	201
	473

Jewett Fellowships	179
Joins	
Sound Added to Film on Mortar Bandage Joints	386
Joseph P. Davis—Pioneer in Underground	
Telephone Distribution	Hill
Junctions, Hybrid, see Waveguides	

K

"Kick Balancer"	
Test Sets for Dielectric Faults in Coaxial	
Cable	Kittner
	416

L

"Laundry," Glass Washing, see Glassware, Chemical	
Leaves of Absence	
Recent Changes in Laboratories' Practice Noted	232
Legion Post 497 Becomes Bell Telephone Post 497	
	386
Legion Post Installs Officers	
	512
Lenses, Microwave Radio	
Artificial Dielectric Lenses for Microwaves	Kock
License Contract	McHugh
License Contract (News Item)	447
	446

M

M1 Carrier: The Common Terminal	Edson
Magnetic Field Strength Meter	494
Magnetometers	
Airborne Magnetometer Explores Volcano	198
Making Energy Talk	Brotherton
	253
Maps	
Coaxial Cable and Radio Relay Routes Move	
Southward and Westward	83
Mobile Telephone Service Triples Size in	
Second Year	307
Marconi Congress	
Europe and the Marconi Congress	34
Materials, Testing	
Preparation of Line-Wire Materials to Study	
Fatigue Properties (Picture)	17
Rubber Thermoplastic Jacket for Buried Cable	Lundberg
	148
Measuring Transmission on Circuits in Use	Tidd
	156
Metals, Fatigue	
Preparation of Line-Wire Materials to Study	
Fatigue Properties (Picture)	17
Metropolitan Bell Symphony Orchestra Makes Its Debut	
at Carnegie Hall	522
Metropolitan Bell Symphony Society	349
Microwave "Telescope" Sweeps Sky Path	212
Mimeographing	
New Collating Machine in Mimeograph	
Department (Picture)	275
Mobile Radio on N. Y., N. H. & H.	229
Mobile Service Traffic Report	470
Mobile Telephone Aids Cosmic Ray Research on	
Mountain Peak	425

Mobile Telephone Service, see Radio Telephone	
Service, Mobile	
Models 65 and 66 Hearing Aids	<i>Power</i> 30
Modernistic Head-Dress	225
Modulation	
Making Energy Talk	<i>Brotherton</i> 253
Modulators	
Historic Firsts: Rectifiers as Modulators	251
Moisture Content Determination	
Adsorbed Water in Insulation	<i>McLean</i> 170
Motion Pictures, Audible	
Sound Added to Film on Mortar Bandage Joints	386
Movable-Screen Cathode-Ray Tube	<i>Johnson</i> 219
Multi-Frequency Key Pulsing	218
Multivibrator Step-Down by Fractional Ratios	<i>Davis</i> 114
Murray Hill	
Buildings From Mountain Avenue (Picture)	420
Future Functional Layout at Murray Hill	40
Murray Hill No. 2	510
Murray Hill Telephone System for Project II	182
Photograph Showing Murray Hill as of	
December 10, 1947	90
Murray Hill Glass Washing "Laundry"	<i>Charity</i> 400
Murray Hill Men Return From Europe	467

N

Navy Industrial Association	
Research Aids in Cause of Peace, from M. J. Kelly's	
Address at the Research Conference	
of the Navy Industrial Association in Washington	82
New Crystal Channel Filter	<i>Willis</i> 13
New Headquarters Building for the Western	
Electric Company	227
New Telephone Directory	387
New Training Courses Start	422
New Vacuum Tubes for the Very High Frequencies	<i>Shower</i> 361
New Waveguide Tube at Holmdel	19
New York-Albany Coaxial System Placed in	
Operation (May 21)	264
New York State Veterans' Bonus, see Bonus,	
Veterans'	
96-Channel Pulse Code Modulation System	<i>Feldman</i> 364
Noise in PCM Systems	<i>Bennett</i> 495

O

Occupational Classifications	
Two New Laboratories Occupational Classifications	352
Orientation Course	135
Oscillators	
Historic Firsts: The Start-Stop Oscillator	210
Oscilloscopes, D-151326	
High-Frequency Oscilloscopes for Pulses and	
Other Transients	<i>Gaines</i> 68
Oxidation	
Rubber and the Weather	<i>Crabtree</i> 119

P

PCM, see Pulse Code Modulation		
Page Turner Given Hospital by Legion	393	
Pantograph		
Picture of the New Gorton Three-Dimensional Pantograph Machine in Use	394	
Part-Time Postgraduate Study Plan	425	
Pensions		
Pensioners Note Receipt Change	518	
Permeability		
Supermalloy	111	
Personnel		
Busch, A. J., Appointed Director of Switching Development	385	
Craig, C. F., Named by A T & T to Head O & E	344	
Green, E. I., New Director of Transmission Apparatus Development	127	
McCurdy, R. G., Dies Suddenly	86	
McHugh Elected to BTL Directorate	467	
Mills, John (Obituary)	302	
Shaw, Thomas, Retires	<i>Blackwell</i>	468
Shewhart, W. A., Returns From India	226	
Staples, R. T., Retires	93	
Vice-Presidential Changes in A T & T and Western Electric	422	
Wilson, Leroy A., Succeeds Gifford as A T & T President	124	
Wilson, William, Former Executive, Dies	266	
Phase Changers		
Adjustable Waveguide Phase Changer	<i>Fox</i>	245
Philadelphia-Cleveland Coaxial Opened for Telephone Service (Map Shown)	508	
Photography		
Committee on High-Speed Photography and Photographic Engineering of the S.M.P.E. Meets Initially at West Street	129	
Playback for Visible Speech	<i>Schott</i>	333
Plotting Board for 65-mc Impedance Measurements	<i>Hopper</i>	258
Poles		
Laboratories Test Plot at Gulfport, Miss.	501	
Polyethylene Cable Sheath	35	
Polyrods	<i>Mueller</i>	64
Portable Microwave Tower	6	
Power Line Treatment for the M1 Carrier Telephone System	<i>Dunham</i>	2
Precision Carbon Resistors	<i>Pfister</i>	401
Presidential Elector		
M. L. Clarke to Cast One New York State Vote in the Electoral College	516	
Press Association, N. J.		
N. J. Press Association Visits Murray Hill	511	
Probe for Testing K Amplifiers	<i>Jones</i>	199
Program Channel Rates		
A T & T Files Rates for 15,000-Cycle Program Channels	130	
Program Transmission		
Bell System Ready to Furnish 15-Kc Program Networks	510	
Transmission Over a 10,750-Mile Circuit	376	
Transmission Over Broadband Carrier Systems	<i>Chesnut</i>	377
Public Address System, Westchester County Home	517	

Pulse Code Modulation	
Beam Deflection Tube for Coding in PCM	Sears 411
Companding in PCM	Reiling 487
Decoding in PCM	Carbrey 451
96-Channel Pulse Code Modulation System	Feldman 364
Noise in PCM Systems	Bennett 495
Pulses	
Distribution Analyzer for Lengths of Impulses	Garfield 325
Pulsing, Multi-Frequency Key	218

Q

Quality Assurance Conference	180
Quantizing	
Noise in PCM Systems	Bennett 495
Queen of Gems May Have Rôle in Telephony	126

R

Radar	
Bell System Radar School	349
Radar Antennas, see Antennas, Radar	
Radio	
Altimeter	
Historic Firsts: Radio Altimeter	18
Broadcasting	
Historic Firsts: Crystal Controlled Broadcasting	420
Circuits	
Radio Circuits for the Death Valley Area	Franke 289
Receivers, 48A and 48B	
248A Marine Radio Telephone Equipment	Newhouse 294
Relay Systems	
Coaxial Cable and Radio Relay Routes	
Move Southward and Westward	83
Repeater Buildings for the First Radio	
Relay System	Tierney 281
Repeaters for the New York-Boston Radio	
Relay System	Roetken 193
Terminals for the New York-Boston Radio	
Relay System	Chaffee 97
Waveguide Branching Filter	Lewis 372
Systems, Microwave	
Football Games of the Illini to Be Televised	470
G. W. Gilman Describes (and Demonstrates)	
Microwave Transmission to M.I.T. Alumni	128
Portable Microwave Tower	6
Silicon Crystal Detector	152
Voices Go to Boston by Cable, Back by Radio	473
Towers	
Microwave Radio Relay Tower Near LaSalle, Mich. (Picture)	433
Portable Microwave Tower	6
Transmission	
Waves and Raindrops	387
Radio Circuits for the Death Valley Area	Franke 289

Radio Telephone		
Equipment		
Highway Mobile Radio Systems (239-Type)	Dorff	491
248A Marine Radio Telephone Equipment	Newhouse	294
Service, Mobile		
C. F. Blackwelder, of Cheyenne Wells, Colorado, Talks With Relatives Over 2,000 Miles Away		393
Mobile Radio on N. Y., N. H. & H.		229
Mobile Radio Prevents Grade Crossing Accident		306
Mobile Service Traffic Report		470
Mobile Telephone Aids Cosmic Ray Research on Mountain Peak		425
Mobile Telephone Service Triples Size in Second Year (Map Shown)		307
Telephone Service for Trains	Monk	9
Trains on Central and New Haven Get Telephone Service		471
Volume Indicators, 753E (Picture)		210
Service, Rural		
Rural Party-Line Service by Radio	Nylund	49
Systems, Police		
Wire Telephone Network for New York State Police	Entz	213
Railway Communication		
Telephone Service for Trains	Monk	9
Rainfall		
Waves and Raindrops		387
Rapid Wetting Test for Solders		63
Recorders, Voice		
Connector Units for Voice Recorders		351
Rectifiers		
Historic Firsts: Rectifiers as Modulators		251
The Silicon Crystal Detector		152
Relay Computer for the Army		208
Relays		
Analyzing Relay Characteristics	Morton	298
Relay Computer for the Army		208
Counting		
Historic Firsts: Counting Relays		291
Type EA		
EA Relay	Miller	340
Type Y		
Slow Acting Relays	Wagar	161
Repeater Buildings for the First Radio Relay		
System	Tierney	281
Repeaters for the New York-Boston Radio Relay		
System	Roetken	193
Reperforator-Transmitter, 14D		
Teletype Reperforator-Transmitter for Automatic Switching Systems	Lake	106
Research Aids in Cause of Peace		
From M. J. Kelly's Address at the Research Conference of the Navy Industrial Association in Washington		82
Resistors, Carbon		
High-Frequency Deposited Carbon Resistors	Van Roosbroeck	407
Precision Carbon Resistors	Pfister	401
Rubber and the Weather	Crabtree	119

Rubber, Synthetic		
Rubber (CR-S and GR-N) and the Weather	Crabtree	119
Synthetic Hard Rubber (GR-S)	Bishop	55
Rubber Thermoplastic Jacket for Buried Cable	Lundberg	148
Rural Party-Line Service by Radio	Nylund	49

S

San Francisco Host to Telephone Pioneers		470
Selective Service, Registration for		429
Silicon Crystal Detector		152
“Sliver Burner,” see Test Sets, 94A		
Slow Acting Relays	Wagar	161
Solder and Soldering		
Rapid Wetting Test for Solders		63
Sound Added to Film on Mortar Bandage Joints		386
Sound Pressure Measurements		
Equipment for Measuring Sound Pressures in the		
Auditory Canal	Wiener	261
Sound Recording, see Recorders, Voice		
Speech, Visible		
Playback for Visible Speech	Schott	333
Splitting the Infinitive		439
Staff Services		
Area Management of Staff Services	Selby	342
Standard Capacitor		500
Step-Downs, see Circuits, Multivibrator		
Stereoscopic Drawing of Crystal Structure		406
Stockrooms		
Murray Hill Chemical Stockroom Pictured		273
Storms		
A Winter’s Tale—the December 26 Snowstorm		85
Sunburn		
Sun-Days Are Here	Manson	280
Supermalloy		111
Switching		
Historic Firsts: Translation		445
Teletypewriter		
Automatic (81B1) Switching for Private-Line		
Teletypewriter Service	Bacon	20
New Automatic Teletype System for Pan		
American Airways		505
Synthetic Crystals of Quartz		384
Synthetic Hard Rubber	Bishop	55

T

TG29 Repeater, see Telegraph Repeaters, TG29		
Taxes		
Personal Income Tax Reduction Under Revenue Act		
of 1948		229
Telegraph		
Repeaters		
Electronic Regeneration of Telegraph Signals	Hearn	173
Systems, Carrier		
Carrier Telegraphy in the Bell System	Hamilton	58
Telemobile		
Traveling Telephones and Displays		427

Telephone		
History		
Joseph P. Davis—Pioneer in Underground Telephone Distribution	Hill	457
Thomas A. Watson—Maker of Telephones	Hill	166
Rates		
New York Telephone Company Asks for Rate Increase		512
Service		
“And the Trumpets Blow”		332
Trapped by Mud, Diver Telephones for Help!		267
Sets		
Modernistic Head-Dress		225
Systems		
Carrier		
New Crystal Channel Filter	Willis	13
Type H		
Radio Circuits for the Death Valley Area	Franke	289
Type K		
Measuring Transmission on Circuits in Use	Tidd	156
Probe for Testing K Amplifiers	Jones	199
Types K and L		
Program Transmission Over Broadband Carrier Systems .	Chesnut	377
Type M1		
M1 Carrier: The Common Terminal	Edson	77
Power Line Treatment for the M1 Carrier Telephone System	Dunham	2
Transmission Features of the M1 Carrier System	Emling	101
Dial		
Whippany Radio Laboratory Goes Dial		131
Rural		
Forty-Two Per Cent of U. S. Farms Have Telephone Service		229
Traffic		
Snow Breaks New York Traffic Record		131
Telephone Business in 1947—A Digest of the (A T & T)		
1947 Annual Report	Honaman	132
Telephone Pioneers of America		
Dr. Fletcher Addresses Life Members Club		228
Frank B. Jewett Chapter		506
Pioneers and Life Members Elect Officers		305
San Francisco Host to Telephone Pioneers		470
Telephone Service for Trains		
Telephone Service for Trains	Monk	9
Telescopes, Radio		
Microwave “Telescope” Sweeps Sky Path		212
Teletype Reperforator-Transmitter for Automatic Switching Systems		
Teletype Reperforator-Transmitter for Automatic Switching Systems	Lake	106
Teletypewriter Switching Apparatus		
New Automatic Teletype System for Pan American Airways		505
Teletypewriter Traffic		
TWX Traffic Increases		515
Teletypewriters		
Automatic Switching for Private-Line Teletypewriter Service .	Bacon	20
81-C-1 Teletypewriter Switching System		370
Electronic Regeneration of Telegraph Signals	Hearn	173
High-Speed Teletypewriter Service for the War		165
Teletype Reperforator-Transmitter for Automatic Switching Systems .	Lake	106
Television		
Bell System Opens Mid-West Television Network (Map)		423
Football Games of the Illini to Be Televised		470
Video-Pair Cable	Windeler	201

Television Network Rates	230
Terminals for the New York-Boston Radio Relay System	Chaffee
Terrain Clearance Indicator	97
Historic Firsts: Radio Altimeter	18
Test Sets	
Cold-Cathode-Tube Test Sets	Johnson
High-Precision Test Set Goes to Washington	301
Test Sets (90A and 94A) for Dielectric Faults in Coaxial Cable	Kittner
Testing	
Rapid Wetting Test for Solders	63
Thomas A. Watson—Maker of Telephones	Hill
Toll Dialing Points Increased	429
Tools	
New Carboloy Grinder (Picture)	437
Trains on Central and New Haven Get Telephone Service	471
Transformers. Model of Baby Grand	160
Transistor	321
Translation of Subscriber Numbers	
Historic Firsts: Translation	445
Transmission Circuit Simulator	Fraser
Transmission Features of the M1 Carrier System	Emling
Transmission Measuring Sets, 31-Type	
Measuring Transmission on Circuits in Use	Tidd
Transmitter, 14D Reperforator-	
Automatic Switching for Private-Line Teletypewriter Service	Bacon
Traveling Telephones and Displays	427
Twist and Elongation Tests of Cables	260
248A Marine Radio Telephone Equipment	Newhouse
	294

U

Underground Distribution Wire	5
---	---

V

Vacuum Tubes, 5530 and 5541	
New Vacuum Tubes for the Very High Frequencies	Shower
Varistors	
Germanium Varistors	485
Video-Pair Cable	Windeler
Video School, Third	201
Voice, see Recorders, Voice	
Voices Go to Boston by Cable, Back by Radio	181
Volume Indicators, 753E	
(Developed for Maintenance Work on Mobile Radio-Telephone Equipment) (Picture)	473
	210

W

Watson, Thomas A.—Maker of Telephones	Hill
Waveguide Branching Filter	Lewis
Waveguides	
Adjustable Waveguide Phase Changer	Fox
New Waveguide Tube at Holmdel	245
Waveguide Hybrids	Tyrrell
Waves and Raindrops	19
Western Electric Company	
Electronics at Allentown	24
New Headquarters Building for the Western Electric Company	387
	502
	227

West Street—New Lounge and Game Room	523
Whippany Radio Laboratory Goes Dial	131
Wide Band Crystal Filter for Carrier Program Circuits	Stehlik
Wire	462
Electropointed Tungsten Wires	Pfann
Underground Distribution Wire	5
Wire Telephone Network for New York State Police	Entz
Wood, Testing	213
Laboratories Test Plot at Gulfport, Miss. (Picture)	501